REMARKS

Regarding the Examiner's overall remarks related to the newly cited reference of Chen et al. (US Patent No. 5,822,524), hereinafter referred to as *Chen*, Applicant wishes to make the above clarifying amendments to the Specification. There is a significant difference between the "error-free" management of packet data of Chen and that of the present invention. It is hoped that said difference, which is discussed in detail hereunder in reference to relevant remarks from the current Office Action, is made more noticeable via the aforementioned amendments.

Regarding the Examiner's rejections to claims 1-3, 5, 7-12 and 14-17 under 35 U.S.C. 103(a) (obviousness) as being unpatentable over *Verreault* (US Patent No. 6,434,169) in view of Sullivan et al. (US Patent No. 6,667,986), hereinafter referred to as *Sullivan*, and in view of Chen et al. (US Patent No. 5,822,524), hereinafter referred to as *Chen;* and to claims 4 and 13 under 35 U.S.C. 103(a) (obviousness) as being unpatentable over *Verreault* in view of *Sullivan*, and in view of *Chen* as applied to claims 1-3, 5 and 7-12, and in further view of Barzegar et al. (US Patent No. 6,347,075), hereinafter referred to as *Barzegar*; and to claim 6 under 35 U.S.C. 103(a) (obviousness) as being unpatentable over *Verreault* in view of *Sullivan*, and in view of *Chen* as applied to claim 5, and in further view of Beighe et al. (US Patent No. 5,912,896), hereinafter referred to as *Beighe*, claims 1 - 17 have been amended. The

amended claims refine the statements of and claim clarifying points of uniqueness not cited in the original and previously amended versions thereof.

The Examiner has asserted that Claims 1-3, 5, 7-12 and 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Verreault* in view of *Sullivan*, and in view of *Chen*. In the sections which follow, Applicant respectfully traverses these rejections on an individual basis, in view of the above amendments to the specification and claims.

Regarding independent claim 1, and the Examiner's rejection over *Verreault* in view of *Sullivan*, based on the revisions of claim 1, as amended herein, Applicant wishes to have the Examiner reconsider the rejection of the claim.

As is disclosed in the Specification and now incorporated as an element of claim 1, "Instead of sending the same packet several times, data redundancy is achieved by appending old data from previous packets (along with their associated packet sequence numbers) in the payload section of the current data packet. The current payload now contains both current and redundant packet data. " Therefore, the payloads of what may be thought of as "redundant data packets" actually contain both current (new, sequential) packet data and one or more previous (old, redundant) sets of packet data - *all in the same payload.*

The above system of error management is quite distinct from that of Chen, as the following comparison reveals:

In the case of packet loss in the present invention, no packet sequence numbers are listed in any "list of lost packets" (as in Chen Col 7, Line 33), and no additional packets are requested through any type of "retransmission request" (as in Chen Col 7, Line 37). The error-correcting redundancy of the present invention is an *ongoing operation,* as described in the specification, where: "If the receiving gateway detects that packet loss has occurred, the data for the lost packets are retrieved by reading further down in the current packet's payload until the data fields of lost packets (as identified by their packet sequence numbers) are found. Then the data contained in those data fields are read by the gateway.", and where: "The amount of redundant data fields contained in each packet is configurable."

Based on the foregoing, and after an analysis of the other references, Applicant respectfully submits that nowhere does *Verreault*, *Sullivan*, or *Chen*, either individually or in combination, teach or suggest the features of "wherein said packets include both new and redundant data which may be read, upon said network packet loss." Therefore, for at least the reasons argued above, Verreault, Sullivan and Beighe, either individually or in combination, fail to render obvious the subject matter of claim 1 under 35 U.S.C. §103(a). Withdrawal of the rejection of claim 1 as unpatentable over

Verreault in view of Sullivan and further in view of Chen is respectfully solicited.

Regarding independent claims 5, 7 and 8, the Examiner cites Verreault, in part, for disclosing that while the modem relay unit is waiting for data from the originating modem terminating equipment, the destination modem relay unit maintains communication with the destination modem terminating equipment to prevent protocol timeouts of the destination modem terminating equipment, as shown in col. 2, line 63- to col. 3, line 3 and by the sanity timeout verifications shown in col. 10, lines 1-9.

In particular, Verreault discloses that the V32ModemRelay performs the state sanity check and calls the Finite State Automaton (FSA) and if the state sanity timer expires, a transition to the switch to voice state is requested. This means that the destination modem relay of *Verreault* ceases communication with the destination modem terminating equipment, actually *permitting rather than preventing* protocol timeouts of the destination modem terminating equipment.

In the present invention, when the modem is not transmitting data, no packets are sent on the IP network (Specification, page 4, lines7 and 8). Further, once a modem call is established, the only call control message that is expected is a termination event (Specification, page 9, lines 20 and 21).

In contrast to *Verreault* then, the present invention does not switch over to a voice state at expiration of a sanity timer during periods of no data transmittal. In fact, the present invention contemplates frequent periods when no packets are sent on the IP network. Hence, the present invention will maintain communication (during such uncommunicative periods) with the destination modem terminating equipment to prevent protocol timeouts of the destination modem terminating equipment, as recited in claims 5, 7, and 8.

Based on the foregoing, Applicant respectfully submits that nowhere does Verrault or Sullivan, either individually or in combination, teach or suggest "maintaining communication with the destination modem terminating equipment to prevent protocol timeouts of the destination modem terminating equipment," as indicated in claims 5, 7, and 8. Therefore, for at least the reasons argued above, Applicant respectfully submits that Verreault and Sullivan, either individually or in combination, do not teach or suggest every feature recited in claims 5, 7 and 8. Accordingly, Verreault and Sullivan, either individually or in combination, fail to render obvious the subject matter of claims 5, 7 and 8 under 35 U.S.C. §103(a). Withdrawal of the rejection of claims 5, 7 and 8 as unpatentable over Verreault in view of Sullivan is respectfully solicited.

Regarding independent claim 10, the Examiner suggests that claim 10 is the method statement corresponding to the system of claim 1 and that it is rejected for the

same reasons as claim 1.

For the same reasons as stated above with respect ot the rejection of claim 1, Applicant respectfully submits that nowhere does *Verreault* or *Sullivan*, or *Chen*, either individually or in combination, teach or suggest the features of "wherein said packets include both new and redundant data which may be read upon said network packet loss." Therefore, for at least the reasons argued above, Applicant respectfully submits that Verreault, Sullivan and Chen, either individually or in combination, do not teach or suggest every feature recited in claim 10. Accordingly, Verreault, Sullivan and Chen, either individually or in combination, fail to render obvious the subject matter of claim 10 under 35 U.S.C. §103(a). Withdrawal of the rejection of claim 10 as unpatentable over Verreault in view of Sullivan and Chen is respectfully solicited.

Regarding dependent claim 14, Applicant wishes to draw the Examiner's attention to the discussion above for claim 10, particularly with regard to the changes which have been made to that claim, which are similar in substance to those of claim 1 and which are discussed in Applicant's remarks regarding claim 1. Accordingly, Applicant requests that the Examiner reconsider the rejection of those aspects of this claim 14 as set forth in claim 10 and formerly thought to have been anticipated by *Verreault* in view of *Sullivan* and *Chen*.

In addition, and according again to the redundancy method discussed above for claims 1 and 10, and in view of currently amended claim 14, Applicant respectfully submits that nowhere does *Verreault* or *Sullivan*, or *Chen*, either individually or in combination, teach or suggest the features of "wherein said providing *both new and redundant data* in a packet follows a first series of data packets in which at least one of said first series of data packets is lost across said packet network." Therefore, for at least the reasons argued above, Applicant respectfully submits that Verreault, Sullivan and Chen, either individually or in combination, do not teach or suggest every feature recited in claim 10 and claim 14, which depends from claim 10 . Accordingly, Verreault, Sullivan and Chen, either individually or in combination, fail to render obvious the subject matter of claim 10 and claim 14, which depends from claim 10 under 35 U.S.C. §103(a). Withdrawal of the rejection of claim 14 as unpatentable over Verreault in view of Sullivan and Chen is respectfully solicited.

Regarding dependent claim 15, in addition to the points made regarding claims 10 and 14, which Applicant believes makes moot the Office Action's comments regarding those claims, and from which claim 15 depends, Applicant traverses the comments in the Office Action directed specifically at this claim.

The Office Action cites *Chen* as explicitly disclosing that redundant data is delayed by a predetermined number of data packets following a first series of data

packets. However, Chen's error management system is based on *frame speeds*, or the number of frames per second which must be forwarded to the client computer to facilitate quality video rather than on any predetermined number of packets from a first sent series of packets. Accordingly, if a packet is lost, a time out value must be set for receiving lost packets, after which time the control server "gives up" and removes the lost packet number from the lost packet list (Chen Col 7, Lines 42-44).

Alternatively, under the present invention, the timing of the sending of packets containing both current and redundant data (which may be only loosely referred to as "redundant packets") is not based on any actual *time* parameter, but is based on a predetermined number of data packet transmissions transpiring - *regardless of how long it takes*. It is understood that this predetermination is based on the type of network, transmission protocols, anticipated network traffic and such factors which portend a probable incidence of packet loss. Because the redundancy method is based on a specified, steady flow of redundant data (as opposed to requested retransmission of lost packets as in *Chen*), an assessment of these loss factors must be made when setting the packet-number delay to avoid unnecessarily utilizing network bandwidth (consumed by the specified quantity of redundant data in each payload), but at the same time to avoid risking error-prone operation of the relay system.

Therefore, Chen discloses a time period for redundant data delay based on

video frame speeds while the present invention bases its timing on a number of packets based on system delay probability assessment. As such, the timing of redundant packet data delivery of Chen is not the same as that of the present invention.

Accordingly, and after an analysis of the other references, Applicant wishes to submit that nowhere does *Verreault*, *Sullivan*, or *Chen*, either individually or in combination, teach or suggest the features of "wherein said providing both new and redundant data is delayed by a predetermined number of data packets following said first series of data packets." Therefore, for at least the reasons argued above, Applicant respectfully submits that Verreault, Sullivan and Chen, either individually or in combination, do not teach or suggest every feature recited in claim 10, 14 and claim 15, which depends from claims 10 and 14. Accordingly, Verreault, Sullivan and Chen, either individually or in combination, fail to render obvious the subject matter of claim 10, 14 and claim 15, which depends from claim 10 and 14 under 35 U.S.C. §103(a). Withdrawal of the rejection of claim 14 as unpatentable over Verreault in view of Sullivan and Chen is respectfully solicited.

Regarding claims 16 and 17, because of the points made regarding claims 10, 14 and 15, which Applicant believes makes moot the Office Action's comments regarding those claims, and from which claims 16 and 17 depend, Applicant respectfully requests withdrawal of the rejection of these claims.

Applicant's Claim 4 is rejected under 35 U.S.C. §103(a) as unpatentable over Verreault in view of Sullivan, as applied to claims 1-3 above, and further in view of Barzegar.

The Office Action cites Barzegar for disclosing a means for establishing optimal modulation and rate parameters. However, nowhere does Barzegar teach or suggest the features of "wherein said packets include both new and redundant data upon the network packet loss," as recited in claim 1.

Therefore, for at least the reasons argued above, Applicant respectfully submits that Verreault, Sullivan and Barzegae, either individually or in combination, do not teach or suggest every feature recited in claim 1. Accordingly, Verreault, Sullivan and Barzegar, either individually or in combination, fail to render obvious the subject matter of claim 1 and claim 4, which depends from claim 1 under 35 U.S.C. §103(a). Withdrawal of the rejection of claim 4 as unpatentable over Verreault in view of Sullivan and further in view of Barzegar is respectfully solicited.

Claim 13 was rejected in the Office Action for the same reasons as claim 4, above. Accordingly, the mitigating discussion for claim 4 above is applied to claim 13, and hence withdrawal of the rejection of claim 13 as unpatentable over Verreault in view of Sullivan and further in view of Barzegar is respectfully solicited.

Claim 6 has been rejected in the Office Action under 35 U.S.C. §103(a) as unpatentable over Verreault in view of Sullivan, and in further view of Chen as applied to claim 5 above, and further in view of Beighe.

The Office Action cites Beighe for disclosing a modem network driver (Fig. 3, block 70).

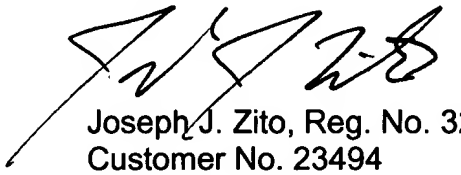
However, nowhere does Beighe teach or suggest "maintaining communication with said destination modem terminating equipment to prevent protocol timeouts of the destination modem terminating equipment," as recited in claim 5.

Therefore, for at least the reasons argued above, Applicant respectfully submits that Verreault, Sullivan and Beighe, either individually or in combination, do not teach or suggest every feature recited in claim 5. Accordingly, Verreault, Sullivan and Beighe, either individually or in combination, fail to render obvious the subject matter of claim 5 and claim 6, which depends from claim 5 under 35 U.S.C. §103(a). Withdrawal of the rejection of claim 6 as unpatentable over Verreault in view of Sullivan and further in view of Beighe is respectfully solicited.

Applicant requests the foregoing amendments to the specification and claims be made to the application and that the application be passed to issue.

Should the Examiner find the Application to be other than in condition for allowance, or in the event the Examiner believes a conference would serve to advance the prosecution of this application in any way, the undersigned attorney is available at the number noted below.

Respectfully submitted,



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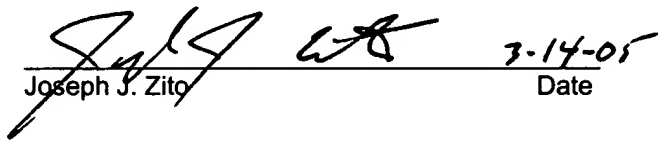

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Date